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“HIS BRAIN HAS BEEN MISMANAGED WITH GREAT SKILL”: HOW WILL JURORS RESPOND TO NEUROIMAGING TESTIMONY IN INSANITY DEFENSE CASES?

*Prof. Michael L. Perlin**

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I. INTRODUCTION

A review of the literature on neuroimaging, predictably, reveals a broad array of positions, promises and prophecies. Carter Snead argues that the ambition of cognitive neuroscientists is “to use the claims of their discipline and the new powers conferred by neuroimaging to overthrow retributive justice as a legitimate justification for criminal sanctions.”¹ Jonathan Marks quotes William Uttal’s warning that neuroimaging may be simply a “neo-phrenological fad.”² David Eagleman claims, “There is a new potential to use detailed combinations of behavioral tests and neuroimaging to better predict recidivism.”³ Perhaps most emphatically, Bruce Arrigo levels this critique:

In short, the mass marketing and wholesale circulation of fMRI technology for medicolegal purposes endorses capitalist status quo dynamics and, as such, breeds, nurtures, and sustains the very structural inequalities (both social and psychological) that result in destructiveness, violence and crime. Indeed, through reliance on such cognitive neuroscience advances, it is assumed that the path to “correcting” the ills of the individual are discoverable through reliance on the novel (though simulated or computer-generated) breakthroughs of science.⁴

In this paper, I do not take sides on this debate. Rather, I discuss a related, but distinctly separate issue: which of these positions will jurors think is right, especially in the context of deciding insanity defense cases. The primary and robust debate that has taken place so far over neuroimaging in law and medical journals has highlighted a series of law-and-policy questions dealing primarily with reliability,⁵ admissibility,⁶ and availability.⁷ Scholars have already expressed an

1. O. Carter Snead, *Neuroimaging and the ‘Complexity’ of Capital Punishment*, 82 N.Y.U. L. REV. 1265, 1316 (2007).

2. Jonathan H. Marks, *Interrogational Neuroimaging in Counterterrorism: A “No-Brainer” or Human Rights Hazard?*, 33 AM. J.L. & MED. 483, 492 n.64 (2007) (quoting WILLIAM UTTAL, *THE NEW PHRENOLOGY: THE LIMITS OF LOCALIZING COGNITIVE PROCESSES IN THE BRAIN* (2003)).

3. David Eagleman, *Neuroscience and the Law*, 45 HOUS. LAW., Apr. 2008, at 36, 38.

4. Bruce Arrigo, *Punishment, Freedom, and the Culture of Control: The Case of Brain Imaging and the Law*, 33 AM. J.L. & MED. 457, 480 (2007).

5. E.g., Richard Redding, *The Brain-Disordered Defendant: Neuroscience and Legal Insanity in the Twenty-First Century*, 56 AM. U L. REV. 51, 75-77 (2006).

6. Avram Barth, *A Double-Edged Sword: The Role of Neuroimaging in Federal Capital Sentencing*, 33 AM. J.L. & MED. 501, 521-22 (2007).

7. Judy Illes & Eric Racine, *Imaging or Imagining? A Neuroethics Challenge Informed by Genetics*, 5 AM. J. BIOETHICS, Mar.-Apr. 2005, at 5, 7.

extensive range of opinions on the value, and perhaps even the ethics, of this testimony. Here, I shift the focus of this paper.

I have spent many years thinking about and writing about the insanity defense and have basically concluded that the debate over the language of the tests employed, the moral philosophical dilemmas inherent in our discussions about free will and rational agency, and the entire range of "what if" hypotheticals that make teaching the insanity defense a criminal law professor's dream are all irrelevant to the core issues of attitudes: why do we (society) feel the way we do about the insanity defense, about insanity defense pleaders, and the disposition of insanity defense cases; and why do these feelings overwhelm any new scientific or behavioral evidence that develops around the question of why some individuals commit inexplicable criminal acts?⁸

Thus, when we consider the topic that I will be addressing in this paper – the impact of neuroimaging evidence on juror decision making in insanity defense cases – we need to recalibrate our focus so as to incorporate other questions that are as essential (most likely more essential) to the resolution of the underlying dilemma: (1) to what extent will such evidence – apparently less inherently susceptible to falsification – have on jurors whose profound suspicion of mental state opinion testimony is well-documented;⁹ (2) will this "falsifiability issue" even matter to jurors whose personal values/moral codes reject the notion of any non-responsibility verdict because it is dissonant with their heuristics-driven, false "ordinary common sense";¹⁰ (3) will there now be some shred of truth in one of the standard insanity defense myths

8. See generally MICHAEL L. PERLIN, *THE JURISPRUDENCE OF THE INSANITY DEFENSE* (1994) [hereinafter PERLIN, *JURISPRUDENCE*]; Michael L. Perlin, "*She Breaks Just Like a Little Girl*": *Neonaticide, The Insanity Defense, and the Irrelevance of "Ordinary Common Sense"*, 10 WM. & MARY J. WOMEN & L. 1 (2003) [hereinafter Perlin, *Neonaticide*]; Michael L. Perlin, "*Big Ideas, Images and Distorted Facts*": *The Insanity Defense, Genetics, and the "Political World"*, in GENETICS AND CRIMINALITY: THE POTENTIAL MISUSE OF SCIENTIFIC INFORMATION IN COURT 37 (Jeffrey Botkin et al. eds., 1999); Michael L. Perlin, "*The Borderline Which Separated You from Me*": *The Insanity Defense, the Authoritarian Spirit, the Fear of Faking, and the Culture of Punishment*, 82 IOWA L. REV. 1375 (1997) [hereinafter Perlin, *Borderline*]; Michael L. Perlin, *Myths, Realities, and the Political World: The Anthropology of Insanity Defense Attitudes*, 24 BULL. AM. ACAD. PSYCHIATRY & L. 5 (1996) [hereinafter Perlin, *Political World*]; Michael L. Perlin, *Psychodynamics and the Insanity Defense: "Ordinary Common Sense" and Heuristic Reasoning*, 69 NEB. L. REV. 3 (1990) [hereinafter Perlin, *Psychodynamics*]; Michael L. Perlin, *Unpacking the Myths: The Symbolism Mythology of Insanity Defense Jurisprudence*, 40 CASE W. RES. L. REV. 599 (1989-90) [hereinafter Perlin, *Myths*].

9. Perlin, *Political World*, *supra* note 8, at 8 ("Any lawyer representing a severely mentally disabled criminal defendant must recognize that, if she enters an insanity defense plea, the jurors will likely be suspicious, negative, and hostile.").

10. See, e.g., Perlin, *Neonaticide*, *supra* note 8; Perlin, *Psychodynamics*, *supra* note 8.

(that the insanity defense is a “rich man’s ploy”);¹¹ that is, will the “rich and famous” be able to disproportionately rely on neuroimaging testimony in their trials?; (4) to what extent will sanism drive juror behavior in such cases;¹² and (5) what are the therapeutic jurisprudence implications of the answers to all of these questions?¹³

This paper will thus proceed as follows. First, I will present a brief overview of neuroimaging. Next, I will examine those factors about neuroimaging that might influence jurors in their deliberations. After that, I will consider the case law that has developed in “neuroimaging cases,” focusing primarily on insanity cases. I will then consider juror attitudes towards the insanity defense in general in an effort to determine what impact this evidence is likely to have on decision making in such cases. Following this, I will consider clusters of collateral legal issues and attitudinal/social issues that need to be “on the table” during this analysis. In my conclusion I will seek to answer the questions that I raised a moment ago.

For my title, I draw on Bob Dylan’s vastly underrated (and no longer performed) masterpiece, “License to Kill.”¹⁴ Oliver Trager characterizes it as “a brooding meditation with apocalyptic undertones that takes on corruption and technology run amok,”¹⁵ which I think is just about perfect. The verse upon which I rely is this:

Now, he’s hell-bent for destruction, he’s afraid and confused
And his brain has been mismanaged with great skill.
All he believes are his eyes
And his eyes, they just tell him lies.

11. PERLIN, JURISPRUDENCE, *supra* note 8, at 18-19.

12. *Id.* See also *infra* text accompanying notes 155-55.

13. See, e.g., MICHAEL L. PERLIN, THE HIDDEN PREJUDICE: MENTAL DISABILITY ON TRIAL 288-300 (2000) [hereinafter PERLIN, HIDDEN PREJUDICE]; Michael L. Perlin, *Representing Criminal Defendants in Incompetency and Insanity Cases: Some Therapeutic Jurisprudence Dilemmas*, U. P.R. L. REV. (forthcoming 2009).

14. BOB DYLAN, *License to Kill*, on INFIDELS (Sony Music Entertainment 1983) [hereinafter *License to Kill*], available at <http://www.bobdylan.com/#/songs/license-kill>. Dylan last performed the song in person in Mountain View, CA, on Sept. 26, 1998. See How Long Has It Been Since Dylan Played . . . , <http://boblast.blogspot.com/> (last visited Apr. 1, 2009).

15. OLIVER TRAGER, KEYS TO THE RAIN: THE DEFINITIVE BOB DYLAN ENCYCLOPEDIA 376 (2004).

But there's a woman on my block,
Sitting there in a cold chill.
She say who gonna take away his license to kill?¹⁶

Think about this topic in the context of these lines. Will the use of neuroimaging make jurors more likely to believe that an individual has less free will than we have traditionally posited, and he "couldn't help" doing what he did – that "his brain has been mismanaged with great skill"?¹⁷ Or will their pre-existing "ordinary common sensical" views about the insanity defense make them reject such evidence, believing that their eyes are "just tell[ing them] lies"?¹⁸

II. OVERVIEW

Definitions of neuroimaging and brain imaging in the law and in the behavioral literature immediately warn us of some land mines. "A brain image is the *vivid* representation of anatomy or physiology through a pictorial or graphic display of data."¹⁹ Neuroimaging modalities "offer an *objective*, non-invasive, *quantifiable* image, which can provide useful information particularly when the clinical examination may otherwise be normal."²⁰ Through advances in neuroscience, "the ability of mental health professionals to assess [frontal lobe dysfunction] and its impact on impulse control is *now sufficiently established* to merit the introduction of such evidence in support of an insanity defense under a control test."²¹ Neuroscience seems "advanced enough to enter forensic psychiatry."²² "Advances in neurobiological research methods allow one to address the nature and biological basis of human behavior."²³ And we assume that jurors can be counted on to critically evaluate such evidence.²⁴

16. *License to Kill*, *supra* note 14 (emphasis added).

17. *Id.*

18. *Id.*

19. Donald R. Reeves et al., *Limitations of Brain Imaging in Forensic Psychiatry*, 31 J. AM. ACAD. PSYCHIATRY & L. 89, 89 (2003) (emphasis added).

20. Joseph H. Baskin et al., *Is a Picture Worth a Thousand Words? Neuroimaging in the Courtroom*, 33 AM. J. L. & MED. 239, 247 (2007) (emphasis added).

21. Redding, *supra* note 5, at 101 (emphasis added).

22. Joachim Witzel et al., *Neurophilosophical Perspectives of Neuroimaging in Forensic Psychiatry – Giving Way to a Paradigm Shift?*, 26 BEHAV. SCI. & L. 113, 115 (2008).

23. Jurgen Muller et al., *Disturbed Prefrontal and Temporal Brain Function During Emotion and Cognition Interaction in Criminal Psychopathy*, 26 BEHAV. SCI. & L. 131, 131 (2008).

24. Dov Fox, *Brain Imaging and the Bill of Rights: Memory Detection Technologies and American Criminal Justice*, 8 AM. J. BIOETHICS 34, 36 (2008).

Some of this language jumps off the page: *vivid, objective, quantifiable, advanced*. I note this because these are all factors that might have a significant impact on jury decision making in cases in which neuroimaging evidence is critically important to the case's ultimate disposition; namely, these are all factors that might lead unwitting fact-finders to believe that the story told by the neuroimaging picture is susceptible to only one interpretation. That, at the outset, is troubling.

The reality is that neuroimaging is "fraught with uncertainties"²⁵ because the steps used in the production and presentation of neuroimaging evidence are "[n]ot only . . . not standardized, they are easily manipulated by a person with the knowledge of the technology."²⁶ Some researchers characterize it as "indistinct."²⁷ Similarly, Amanda Pustilnik warns of "overreaching claims about the relationship between individual neurobiology and criminal violence."²⁸ Other scholars charge that "researchers, clinicians, and lawyers are seduced into becoming true believers in the merits of [brain imaging] for understanding the relationship between brain and behavior."²⁹ On this point, Professors Tancredi and Brodie stress that "an ideological approach to understanding the brain of those claiming insanity for their criminal actions would be one that holds on to an image as though it were the truth of what is being asserted about the brain."³⁰

Scholars vacillate between positions that neuroimaging is like or is unlike other scientific evidence.³¹ Dov Fox finds "no reason to think that jurors will be any less capable of critically evaluating EEG or fMRI tests than they are of evaluating other types of scientific evidence."³² Alexandra Roberts considers analogies to both DNA and polygraph

25. Alexandra Roberts, Note, *Everything New is Old Again: Brain Fingerprinting and Evidentiary Analogy*, 9 YALE J.L. & TECH. 234, 266 n.155 (2007).

26. Reeves, *supra* note 19, at 90.

27. Timo Vloet et al., *Structural and Functional MRI Findings in Children and Adolescents with Antisocial Behavior*, 26 BEHAV. SCI. & L. 99, 99 (2008).

28. Amanda Pustilnik, *Violence on the Brain: A Critique of Neuroscience in Criminal Law*, 44 WAKE FOREST L. REV. (forthcoming Apr. 2009).

29. Laurence Tancredi & Jonathan Brodie, *The Brain and Behavior: Limitations in the Legal Use of Functional Magnetic Resonance Imaging*, 33 AM. J. L. & MED. 271, 289 (2007).

30. *Id.*

31. Compare Diane Hoffmann & Karen Rothenberg, *Judging Genes: Implications of the Second Generation of Genetic Tests in the Courtroom*, 66 MD. L. REV. 858 (2007) (DNA tests), with Aimee Logan, Note, *Who Says So? Defining Cruel and Unusual Punishment by Science, Sentiment, and Consensus*, 35 HASTINGS CONST. L. Q. 195 (2008) (IQ tests).

32. Fox, *supra* note 24, at 36.

testimony, and finds them both wanting.³³ But there is little doubt that "hard science" – neuroimaging certainly appears to be "hard science" – at the very least, in the words of a veteran death penalty defense lawyer, makes "Legislators stand up and listen."³⁴ Already, there has been a flurry of activity focusing on the question on whether neuroimaging can finally and conclusively shed light on (1) the roots and etiology of psychopathic behavior, and (2) accurately identifying who is a "psychopath."³⁵ Neuroimaging has even been discussed as a potential tool of counterterrorism.³⁶

My point is simple: the existence of neuroimaging techniques has changed the contours of the playing field, and no matter which side of the divide we find ourselves on, we must acknowledge that reality.³⁷

III. FACTORS/FACT-FINDERS' CONSTRUCTIONS

I have identified a cluster of factors that we must think about seriously in an effort to understand how neuroimaging evidence will be construed by fact-finders: visualization, reductionism, the attribution heuristic, and the impact of a belief in "the CSI effect." I will discuss each of these briefly.

A. Visualization

We start with the obvious. Neuroimaging testimony is colorful³⁸ and grabs the viewer's attention with representations that may "appear like holograms."³⁹ The visual "allure"⁴⁰ can "dazzle[]" and "seduc[e]"

33. Roberts, *supra* note 25, at 248-49.

34. Jay Aronson, *Brain Imaging, Culpability, and the Juvenile Death Penalty*, 13 PSYCHOL. PUB. POL'Y & L. 115, 128 (2007).

35. See, e.g., Laura Guy & John Edens, *Gender Differences in Attitudes Toward Psychopathic Sexual Offenders*, 24 BEHAV. SCI. & L. 65 (2006); Muller et al., *supra* note 23; Sabrina Weber et al., *Structural Brain Abnormalities in Psychopaths – A Review*, 26 BEHAV. SCI. & L. 7 (2008).

36. See, e.g., Marks, *supra* note 2; Sean Thompson, *The Legality of the Use of Psychiatric Neuroimaging in Intelligence Interrogation*, 90 CORNELL L. REV. 1601 (2005).

37. To be cheeky, I could say by way of paraphrase of my muse, in homage to my colleague responsible for this Symposium, "Something's happening here/and we don't know what it is/Do we, Professor Moriarty?" The lyrics, of course, are modified from "Ballad of a Thin Man." See *Ballad of a Thin Man*, <http://www.bobdylan.com/#/songs/ballad-thin-man> (last visited Sept. 9, 2008).

38. Jennifer Kulynych, Note, *Psychiatric Neuroimaging Evidence: A High-Tech Crystal Ball*, 49 STAN. L. REV. 1249, 1256 (1997).

39. Jane Moriarty, *Flickering Admissibility: Neuroimaging in the U.S. Courts*, 26 BEHAV. SCI. & L. 29, 45 n.133 (2008) (quoting Marks, *supra* note 2, at 486).

40. Laura Khoshbin & Shahram Khoshbin, *Imaging the Mind, Minding the Image: An Historical Introduction to Brain Imaging and the Law*, 33 AM. J. L. & MED. 171, 182 (2007).

jurors⁴¹ in ways that are “inappropriately persuasive.”⁴² The fact that neuroimaging appears “interesting” may make it more impressive and probative to jurors than clinical or actuarial testimony.⁴³ It is thus *vivid*, and forces us to re-consider the dominance and the power of the *vividness heuristic*, a cognitive-simplifying device through which a “single vivid, memorable case overwhelms mountains of abstract, colorless data upon which rational choices should be made”,⁴⁴ in this context, *visual* images are particularly vivid.⁴⁵

B. Reductionism

Professor Neil Feigenson concludes that these colorful depictions are inappropriately reductionist; neuroimaging testimony has the meretricious capacity to “reduce[] psychosocial complexity,”⁴⁶ an error that encourages jurors to improperly misuse the cognitive-simplifying attribution heuristic – through which we “interpret a wide variety of additional information to reinforce pre-existing stereotypes”⁴⁷ – in this sort of decision making. This is the charge that Bruce Arrigo has thus asserted:

In short, cognitive neuroscience’s ability to detect neuronal activity that allows the fMRI investigator to visualize and, presumably, understand how the brain reacts/thinks when presented with a series of questions such that these scanned activities can be measured accurately, is an overly reductionistic and deterministic perspective.⁴⁸

41. *Id.* at 183, 185. See also Tancredi & Brodie, *supra* note 29, at 289; Jennifer Kulynych, *Brain, Mind, and Criminal Behavior: Neuroimaging as Scientific Evidence*, 36 JURIMETRICS J. 235, 244 (1996) (using “seduction” or “seductive” as the descriptor); *An Overview of the Impact of Neuroscience Evidence in Criminal Law* 10 (President’s Council on Bioethics Staff Working Paper), available at http://www.bioethics.gov/background/neuroscience_evidence.html (discussing how jurors can be “dazzled” by MRI displays).

42. Neil Feigenson, *Brain Imaging and Courtroom Evidence: On the Admissibility and Persuasiveness of fMRI*, 2 INT’L J. L. CONTEXT 233, 243 (2006).

43. Moriarty, *supra* note 39, at 48.

44. Perlin, *Borderline*, *supra* note 8, at 1417.

45. Michael L. Perlin, *Competency, Deinstitutionalization, and Homelessness: A Story of Marginalization*, 28 HOUS. L. REV. 63, 89 n.154 (1991).

46. Feigenson, *supra* note 42, at 248.

47. Perlin, *Borderline*, *supra* note 8, at 1417.

48. Arrigo, *supra* note 4, at 474. See also Marks, *supra* note 2, at 492 (discussing Tom Buller’s critique of “reductionist neuroscience” and citing to Tom Buller, *Brains, Lies and Psychological Explanations*, in *NEUROETHICS: DEFINING THE ISSUES IN THEORY, PRACTICE AND POLICY* 51 (Judy Illes ed., 2005)). See also Pustilnik, *supra* note 28, (discussing “brain-based reductionism in criminal law” and “major tenets of brain-behavior reductionism that historically have been manifest in past episodes of brain sciences in the criminal law”).

C. Attributionism

The attribution heuristic teaches us that we "overattribute others' behavior to the kinds of people they are rather than to the circumstances in which they find themselves."⁴⁹ We have always sought to attribute human behavior, in the words of Laura Khoshbin and Shahram Khoshbin, "to a physical source within the head."⁵⁰ This desire is intensified when we seek to explain violence, especially either otherwise-inexplicable violence or political violence.⁵¹ The potential for concern is exacerbated further by what Professor David Faigman and his colleagues have characterized as "the general lack of scientific literacy among Americans, including lawyers and judges."⁵²

D. "The CSI Effect"

All participants in the criminal justice system agree on one thing: the existence of what is called "the CSI effect."⁵³ What this means is fairly clear – jurors (and presumably judges) are so inured to the ubiquity of forensic evidence from the "leave no doubt" crime solver on TV police procedural shows that there is an expectation that such evidence will be presented in all criminal trials.⁵⁴ In truth, this belief is based on anecdotal evidence (some of it stupefying),⁵⁵ and jurors'

49. Feigenson, *supra* note 42, at 248 (quoting RICHARD NISBETT & LEE ROSS, HUMAN INFERENCE: STRATEGIES AND SHORTCOMINGS OF SOCIAL JUDGMENT (1980)).

50. Khoshbin & Khoshbin, *supra* note 40, at 171.

51. See Marks, *supra* note 2; Thompson, *supra* note 36.

52. David L. Faigman et al., *Check Your Crystal Ball at the Courthouse Door, Please: Exploring the Past, Understanding the Present, and Worrying About the Future of Scientific Evidence*, 15 CARDOZO L. REV. 1799, 1834-35 (1994).

53. As of Oct. 4, 2008, a simple WESTLAW JLR search for "CSI effect" showed 106 documents in which that phrase was used.

54. According to a recent article by Wendy Brickell, there are actually *two* effects:

One view is that the CSI (crime scene investigation) effect increases the burden on the prosecution by creating a greater expectation that scientific evidence will be presented at trial. The other view is that the CSI effect increases the defense's burden--forcing defense attorneys to overcome jurors' perception that scientific evidence is infallible.

Wendy Brickell, *Is It the CSI Effect or Do We Just Distrust Juries?*, 23 CRIM. JUST. 10, 11 (2008).

55. According to Judge Donald Shelton, "I once heard a juror complain that the prosecution had not done a thorough job because 'they didn't even dust the lawn for fingerprints.'" Donald E. Shelton, *The "CSI Effect": Does It Really Exist*, NAT'L INST. JUST., Mar. 2008, at 1, 2. Monica Robbers points out that jurors "appear to have no tools to assess the credibility of forensic testing on television shows or in trials." Monica Robbers, *Blinded by Science: The Social Construction of Reality in Forensic Television Shows and Its Effect on Criminal Jury Trials*, 19 CRIM. JUST. POL'Y REV. 84 (2008).

expectations of forensic evidence vary with the type of case.⁵⁶ The valid and reliable evidence that such a CSI effect exists in jurors' minds – to the extent that they demand the “money shot” of hard forensic evidence in all trials – is scant.⁵⁷ But, the fact remains that participants in the criminal justice system believe that jurors believe in this effect.⁵⁸ And that is what needs to be confronted: this perception, whether or not it is seriously flawed.

E. Conclusion

Fact-finders must consider these factors carefully, as each one has the capacity to distort the meaning, the weight and the “truth” of neuroimaging testimony. It is now necessary to consider the array of case law in which neuroimaging evidence has been considered in an effort to determine what impact, if any, these factors have had.

III. NEUROIMAGING IN CASE LAW

A. Introduction

How has neuroimaging been dealt with in the case law? A recent article characterizes the legal system as having been “quick” to incorporate brain-imaging evidence into the trial process, finding 130 reported cases involving PET and SPECT brain imaging evidence and two with fMRI evidence.⁵⁹ Professor Mark Pettit has offered a four-part categorization of the types of cases in which such testimony might be used – cases involving brain structure, brain function, prediction of future behavior, and lie detection⁶⁰ – and suggests that admissibility problems increase as “one moves from use one to use four.”⁶¹

56. Donald Shelton et al., *A Study of Juror Expectations and Demands Concerning Scientific Evidence: Does the “CSI Effect” Exist?*, 9 VAND. J. ENT. & TECH. L. 331, 358 (2006). *See also id.* at 362 (“[S]urvey results did not show that the demand for scientific evidence as proof of guilt was related to watching crime related television programs.”).

57. *See generally id.*

58. Khoshbin & Khoshbin, *supra* note 40, at 182.

59. Yaling Yang et al., *Brain Abnormalities in Antisocial Individuals: Implications for the Law*, 26 BEHAV. SCI. & L. 65, 77-78 (2008). Yang and colleagues rely on Prof. Feigenson's study for their data. *See Feigenson, supra* note 42, at 237 (as Feigenson's search was done over two years ago, it suggests that the present number would reasonably be significantly higher).

60. Mark Pettit, *fMRI and BF Meet FRE: Brain Imaging and the Federal Rules of Evidence*, 33 AM. J. L. & MED. 319, 320-23 (2007).

61. *Id.* at 321.

While the "high card" cases that are well known to the public are primarily criminal – this being a perfect example of the vividness heuristic – a significant number of these cases involve such civil matters as:

- removal of a vegetative-state child from life supports;⁶²
- trauma suffered by victims of brain injuries;⁶³
- testamentary capacity;⁶⁴
- disability claims;⁶⁵
- toxic tort exposure;⁶⁶ and
- the relationship between violent behavior and video games.⁶⁷

B. High Profile Criminal Cases

Not surprisingly, there has been far less academic (and media) attention paid to most of these cases than to the handful of high profile criminal cases involving neuroimaging testimony.⁶⁸ Of these, the two most prominent (or perhaps notorious) have been the cases of Vincent Gigante and John Hinckley.⁶⁹

1. Gigante

Vincent Gigante, allegedly the "boss" of a New York organized crime family, was well known for walking the streets of Greenwich Village in New York in a bathrobe and slippers, muttering to himself.⁷⁰ At his trial, he presented a number of well-credentialed experts to testify

62. Moriarty, *supra* note 39, at 40-41.

63. *Id.* at 39, 41.

64. *Id.*

65. *Id.* at 41-42; Petit, *supra* note 60, at 337.

66. Kulynych, *supra* note 38, at 240-41; Pettit, *supra* note 60, at 336; Snead, *supra* note 1, at 1291.

67. Snead, *supra* note 1, at 1292.

68. In addition to the cases discussed *infra* in the text accompanying notes 70-88, neuroimaging has also been used in cases involving (1) potential reduction in degrees of homicide, Moriarty, *supra* note 39, at 39, (2) capacity of a defendant to plead guilty, *id.* at 44, and (3) the penalty phase of a death penalty trial, *id.* at 45; Snead, *supra* note 1, at 1308 n.215. It has also been discussed extensively in the context of the juvenile death penalty. See, e.g., Snead, *supra* note 1, at 1302-06; Aronson, *supra* note 34 at 128; D. Brian Woo, *Cudgel or Carrot: How Roper v. Simmons Will Affect Plea Bargaining in the Juvenile System*, 7 PEPP. DISP. RESOL. L.J. 475 (2007); Kathryn Lynn Modecki, *Addressing Gaps in the Maturity of Judgment Literature: Age Differences and Delinquency*, 32 LAW & HUM. BEHAV. 78 (2008). See Snead, *supra* note 1, at 1291-93 nn.125-37 (for a listing of relevant cases (civil and criminal)).

69. See *infra* note 89.

70. See Joseph A. Baskin et al., *Is a Picture Worth a Thousand Words? Neuroimaging in the Courtroom*, 33 AM. J. L. & MED. 239, 250-51 (2007).

that he was not competent to stand trial.⁷¹ In support of this position, Mr. Gigante sought to present PET scans to bolster the clinical diagnoses of dementia and/or Alzheimer's disease; however, these tests were rejected due to "speculative scientific theories," lack of baseline studies, and the limited number of controls.⁷² The trial court concluded that the evidence was unreliable, and neither credible nor persuasive.⁷³

A simple GOOGLE search of "Gigante and 'PET scan'" reveals 281 documents.⁷⁴ This was a case that was the subject of intense publicity and is about as vivid an example as is imaginable.⁷⁵ Some observers believed that it formed the basis of the storyline in *The Sopranos* in which Uncle Junior feigned incompetence (an ironic backdrop to his later development of authentic symptoms of incompetence).⁷⁶ We are left here with the conclusion drawn by Elyn Saks and Stephen Behnke about overly vivid evidence in general: "[E]ven generally effective decision makers who indisputably have the ability to form accurate beliefs misuse statistics, misunderstand probabilities, and accord undue weight to vivid examples."⁷⁷

2. Hinckley

Twenty-three years ago, I had this to say about the John W. Hinckley case:

Separate streams of public opinion-outrage over the courts' perceived "softness on crime"; . . . outrage over a jurisprudential system that could even allow a defendant who shot the President in cold blood (on national television) to plead "not guilty" (by any reason); outrage at a jurisprudential system that countenanced obfuscatory and confusing

71. *United States v. Gigante*, 982 F. Supp. 140, 147 (E.D.N.Y. 1997).

72. *Id.*; see Moriarty, *supra* note 39, at 39-40; Pettit, *supra* note 60, at 335-36; see also Baskin et al., *supra* note 70; PETER MAAS, UNDERBOSS 297-98 (1997).

73. *Gigante*, 982 F. Supp. at 148.

74. Search done Oct. 4, 2008.

75. My admittedly impressionistic recollection is that it was given Britney Spears-type coverage by both NYC tabloids as long as it was before the courts. On the impact of media focus on the reinforcement of stereotypes in vivid cases involving individuals with mental illness, see Matthias Angermeyer & Beate Schulze, *Reinforcing Stereotypes: How the Focus on Forensic Cases in News Reporting May Influence Public Attitudes Towards the Mentally Ill*, 24 INT'L J. L. & PSYCHIATRY 469 (2001).

76. See *The Sopranos: Whoever Did This* (HBO television broadcast Nov. 10, 2002), available at <http://www.hbo.com/sopranos/episode/season4/episode48.shtml>, cited in Terry Maroney, *Emotional Competence, "Rational Understanding," and the Criminal Defendant*, 43 AM. CRIM. L. REV. 1375, 1377 n.7 (2006).

77. Elyn R. Saks & Stephen H. Behnke, *Competency to Decide on Treatment and Research: MacArthur and Beyond*, 10 J. CONTEMP. LEGAL ISSUES 103, 115 (1999).

testimony by competing teams of psychiatrists as to the proper characterization of a defendant's mental illness; in short, outrage over the "abuse" of the insanity defense—became a river of fury after the . . . verdict was announced.⁷⁸

Exactly why the jury found Hinckley not guilty by reason of insanity is, of course, an open question.⁷⁹ The trial court permitted an expert witness to introduce a CT scan that purportedly showed a "widening" of sulci in Hinckley's brain in support of the witness's diagnosis of schizophrenia,⁸⁰ notwithstanding the reality that "there is no known 'normal' figure of sulcal width."⁸¹ Hinckley's expert witness had said this about the CT test: "As an instrument for viewing the brain, I think it is absolutely unquestioned. It is considered the greatest diagnostic advance perhaps in the last fifty years. It is used routinely."⁸²

Although Lincoln Caplan, the author of the most important book written about the Hinckley trial, concluded that the CT scan "accomplished less than the defense would have liked, and less than the government had feared," and that "it was not likely that anyone in court had seen the scans as the clincher,"⁸³ and although Jennifer Kulynych characterizes the evidence as a "red herring,"⁸⁴ other scholars have taken the position (in which I concur)⁸⁵ that trial observers "seem to agree that the abnormal CAT scans of Hinckley's brain were highly instrumental in his acquittal."⁸⁶

Certainly, the verdict in this case – that I have characterized as "perhaps the most vivid insanity defense trial in American legal history"⁸⁷ – brought to the public's attention the potential use of

78. Michael L. Perlin, *The Things We Do for Love: John Hinckley's Trial and the Future of the Insanity Defense in the Federal Courts*, 30 N.Y.L. SCH. L. REV. 857, 859 (1985) (book review) (emphasis in original).

79. I discuss this at length in PERLIN, JURISPRUDENCE, *supra* note 8, at 13-16, 333-48. See also, Perlin, *supra* note 78; Perlin, *Myths*, *supra* note 8; Perlin, *Borderline*, *supra* note 8; Perlin, *Political World*, *supra* note 8.

80. Kulynych, *supra* note 38, at 1252.

81. *Id.*

82. LINCOLN CAPLAN, THE INSANITY DEFENSE AND THE TRIAL OF JOHN W. HINCKLEY, JR. 79 (1984). *Contra* Vloet et al., *supra* note 27, at 99 ("MRI is still a rather . . . indistinct method for forensic assessment.").

83. *Id.* at 85.

84. Kulynych, *supra* note 38, at 1257.

85. See Perlin, *Myths*, *supra* note 8, at 721-22 ("[T]he most persuasive testimony presented in the Hinckley trial consisted of abnormal CAT scans.").

86. Lawrence T. White, *The Mental Illness Defense in the Capital Penalty Hearing*, 5 BEHAV.SCI. & L. 411, 417 (1987).

87. Perlin, *Borderline*, *supra* note 8, at 1420.

neuroscience evidence in high-profile criminal cases. It is not a surprise that we are still dealing with the fallout from that decision.⁸⁸

In short, the public's knowledge of neuroscience-in-the-law may be disproportionately skewed by its knowledge of high-profile cases (especially high-profile criminal cases), and its inaccurately assuming that these cases are representative of other/all cases.⁸⁹ Those who are interested in this question must deal with this reality, no matter which side of the neuroscience-evidence-is-good/neuroscience-evidence-is-bad divide they fall.

IV. JUROR ATTITUDES

With all this backdrop, I will segue into the heart of this paper – what impact, if any, the introduction of this “new” evidence will have on the ways that jurors construe insanity defense evidence. To answer this question, I will briefly review juror response to insanity defense testimony in general, and will then speculate as to how – given these attitudes – jurors will likely respond to neuroimaging evidence if it is used more frequently.

A. Attitudes in General

The research about how jurors think about the insanity defense and defendants who plead insanity has revealed a cluster of consistent attitudes:

1. We know that jurors' pre-existing attitudes toward the insanity defense as a defense are the strongest predictor of individual verdicts,⁹⁰ and that jurors bring “their own personal sense of

88. There have been other locally – and regionally – high profile cases involving neuroimaging testimony. See e.g., *United States v. Mezvinsky*, 206 F. Supp. 2d 661 (E.D. Pa. 2002) (discussing a multi-million dollar fraud case where the defendant was a former Congressman); *People v. Goldstein*, 786 N.Y.S.2d 428 (N.Y. App. Div. 2004) (discussing a murder case in which the victim was Kendra Webdale, after whom NY's assisted outpatient treatment law was named), *rev'd on other grounds*, 843 N.E.2d 727 (N.Y. 2005). Both cases are discussed in this context in Moriarty, *supra* note 39, at 43-44.

89. This exemplifies the “representativeness” heuristic that leads individuals to extrapolate overconfidently based upon a small sample size of which they happen to be aware. See e.g., Amos Tversky & Daniel Kahneman, *Belief in the Law of Small Numbers*, in *JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES* 23, 24-25 (Daniel Kahneman et al. eds., 1982). I discuss the implications of Tversky and Kahneman's insights for insanity defense cases in Perlin, *Psychodynamics*, *supra* note 8.

90. Caton F. Roberts & Stephen L. Golding, *The Social Construction of Criminal Responsibility and Insanity*, 15 *LAW & HUM. BEHAV.* 349, 372 (1991).

justice" to their insanity defense deliberations, including "attitudes about the morality of the insanity defense and the punishment of mentally ill offenders."⁹¹

2. The notion of any defense that allows criminals to claim they were not responsible for acts that they admittedly did⁹² is rejected in total by a significant percentage of the population.⁹³
3. Jurors construct mental disability as an "all or nothing" concept,⁹⁴ and when forced to choose a substantive insanity test, select the eighteenth century, pre-*M'Naghten*, "wild beast" test⁹⁵ as the one that most comports with their "ordinary common sense" (OCS) concepts of justice.⁹⁶
4. An overwhelming number of potential jurors distrust expert testimony that is proffered to offer an exculpatory mental status-related explanation for what would otherwise be criminal behavior.⁹⁷ This distrust flows from what I have characterized as the "fear of faking,"⁹⁸ the concern that self-reported symptoms (e.g., "I hear voices" and "Napoleon told me to do

91. LAWRENCE S. WRIGHTSMAN ET AL., *PSYCHOLOGY AND THE LEGAL SYSTEM* 298-99 (4th ed. 1998) (emphasis added). On how morality issues are constructed in the neuroimaging debate, see *infra* text accompanying notes 136-41.

92. One cannot plead the insanity defense unless one concedes that the *actus reus* was committed. See *Jones v. United States*, 463 U.S. 354, 363 (1983) ("A verdict of not guilty by reason of insanity establishes two facts: (i) the defendant committed an act that constitutes a criminal offense, and (ii) he committed the act because of mental illness.").

93. See, e.g., Valerie P. Hans & Dan Slater, "Plain Crazy: Lay Definitions of Legal Insanity," 7 INT'L J.L. & PSYCHIATRY 105, 110 (1984) (noting that public opinion polls have consistently shown a majority of Americans believe the insanity defense is a "loophole that allows too many guilty people to go free."); Caton Roberts et al., *Implicit Theories of Criminal Responsibility: Decision Making and the Insanity Defense*, 11 LAW & HUM. BEHAV. 207, 225 (reporting that 66% of the population expresses an opinion that insanity should not be a defense).

94. Michael L. Perlin, "The Executioner's Face Is Always Well-Hidden": The Role of Counsel and the Courts in Determining Who Dies, 41 N.Y.L. SCH. L. REV. 201, 228 (1996); *id.* at 228 n.176 (quoting James M. Doyle, *The Lawyers' Art: "Representation" in Capital Cases*, 8 YALE J.L. & HUMAN. 417, 445 (1996)) ("[T]here will be enormous pressures to craft a representation that earns the defendant membership in a preexisting, stereotypical category of 'acute' or 'extreme' illness, and to show that he fits into that category all of the time – that he is all sickness, no function.") (alteration in original).

95. Roberts & Golding, *supra* note 90, at 223-24.

96. See, e.g., Perlin, *Neonaticide*, *supra* note 8, at 8 ("[O]rdinary common sense" refers to a "self-referential and non-reflective" way of constructing the world ("I see it that way, therefore everyone sees it that way; I see it that way, therefore that's the way it is").").

97. See, e.g., Jennifer L. Skeem et al., *Venirepersons's Attitudes Toward the Insanity Defense: Developing, Refining, and Validating a Scale*, 28 LAW & HUM. BEHAV. 623 (2004).

98. See generally Perlin, *Borderline*, *supra* note 8.

it”) are inherently falsifiable and that testimony that depends on such self-reports is inherently untrustworthy.⁹⁹

5. Juror attitudes consistently reflect what I have frequently characterized as “sanist” thinking;¹⁰⁰ in insanity cases, jurors demonstrate what I have characterized as “irrational brutality, prejudice, hostility, and hatred toward insanity pleaders.”¹⁰¹ Think of some of the sanist myths upon which jurors rely:

- reliance on a fixed vision of popular, concrete, visual images of craziness;
- an obsessive fear of feigned mental states;
- a presumed absolute linkage between mental illness and dangerousness;
- sanctioning of the death penalty in the case of mentally retarded defendants, some defendants who are “substantially mentally impaired,” or defendants who have been found guilty but mentally ill (GBMI);
- the incessant confusion and conflation of substantive mental status tests; and
- the regularity of sanist appeals by prosecutors in insanity defense summations, arguing that insanity defenses are easily faked, that insanity acquittees are

99. Justice Scalia embraces this myth. See *Atkins v. Virginia*, 536 U.S. 304, 354 (2002) (Scalia, J. dissenting). Justice Scalia states:

Nothing has changed the accuracy of Matthew Hale’s endorsement of the common law’s traditional method for taking account of guilt-reducing factors, written over three centuries ago:

“[Determination of a person’s incapacity] is a matter of great difficulty, partly from the easiness of counterfeiting this disability . . . and partly from the variety of the degrees of this infirmity, whereof some are sufficient, and some are insufficient to excuse persons in capital offenses”

Id. (alteration and omissions in original).

I critique this position in Michael L. Perlin, “*Life Is in Mirrors, Death Disappears*”: Giving Life to *Atkins*, 33 N. MEX. L. REV. 315, 330-31 (2003), and Michael L. Perlin, *Recent Criminal Legal Decisions: Implications for Forensic Mental Health Experts*, in FORENSIC PSYCHOLOGY: EMERGING TOPICS AND EXPANDING ROLES 333, 339-41 (Alan Goldstein ed., 2006).

100. Michael L. Perlin, *The Sanist Lives of Jurors in Death Penalty Cases: The Puzzling Role of “Mitigating” Mental Disability Evidence*, 8 NOTRE DAME J. L., ETHICS & PUB. POL. 239, 257 (1994) (“[J]urors reflect and project the conventional morality of the community, and judicial decisions in all areas of civil and criminal mental disability law continue to reflect and perpetuate sanist stereotypes.”) [hereinafter Perlin, *Sanist Lives of Jurors*]. See Christian Breheny et al., *Gender Matters in the Insanity Defense*, 31 LAW & PSYCHOL. REV. 93 (2007) (reporting on valid and reliable research confirming the role of sanism in insanity defense attitudes).

101. PERLIN, JURISPRUDENCE, *supra* note 8, at 317.

often immediately released, and that expert witnesses are readily duped.¹⁰²

6. Juror attitudes further continue to reify a series of behavioral myths:

Myth #1: The insanity defense is overused.¹⁰³

Myth #2: The use of the insanity defense is limited to murder cases.¹⁰⁴

Myth #3: There is no risk to the defendant who pleads insanity.¹⁰⁵

Myth #4: NGRI acquittees are quickly released from custody.¹⁰⁶

Myth #5: NGRI acquittees spend much less time in custody than do defendants convicted of the same offenses.¹⁰⁷

Myth #6: Criminal defendants who plead insanity are usually faking.¹⁰⁸

7. None of this is at all new. 170 years ago, Isaac Ray wrote, "the jury is seldom a proper tribunal for distinguishing the true from the false, and fixing on each its rightful value."¹⁰⁹

8. On the other hand, jurors are less suspicious of expert testimony that is premised on organic (rather than psychodynamic) evidence.¹¹⁰

102. Perlin, *Borderline*, *supra* note 8, at 1422.

103. Perlin, *Myths*, *supra* note 8, at 648.

104. *Id.* at 649.

105. *Id.* at 650.

106. *Id.*

107. *Id.* at 651.

108. *Id.* According to Professor Jennifer Skeem and her colleagues, these myths are often "inflexible." See Skeem et al., *supra* note 97, at 625.

109. Catherine Struve, *Doctors, the Adversary System, and Procedural Reform in Medical Liability Litigation*, 72 *FORDHAM L. REV.* 943, 959 (2004) (citing ISAAC RAY, *A TREATISE ON THE MEDICAL JURISPRUDENCE OF INSANITY* 59 (1838)).

110. Phoebe Ellsworth et al., *The Death-Qualified Jury and the Defense of Insanity*, 8 *LAW & HUM. BEHAV.* 81, 84 (1984). See generally Perlin, *Borderline*, *supra* note 8, at 1407-08 (citing Kulynych, *supra* note 38) ("The sense among the legal community and the general public that there is something different about mental illness and organic illness, so that, while certain physiological disabilities may be seen as legitimately exculpatory, emotional handicaps are not.").

I first focused on these myths in my writing nearly 20 years ago.¹¹¹ Researchers – mostly forensic psychologists – that have tested my assumptions have basically confirmed that they are an accurate picture of juror behavior.¹¹² But this research has not yet focused on the topic before us today: what impact neuroimaging evidence will have on jurors in insanity defense cases?

This is a difficult question for many reasons, not the least of which is the conflict – perhaps, to borrow a term from constitutional analysis, an “incredible dilemma”¹¹³ – it poses between two clusters of beliefs. On one hand, neuroimaging evidence – facially “objective,” facially less susceptible to falsification efforts, facially “hard science” – appears to be the sort of evidence that jurors “prefer” in insanity defense cases. On the other, however, the level of juror antipathy to the insanity defense is profound. And this is the question to which behavioral researchers will next need to turn their attention: which of these attitudes will, eventually, “trump” the other?

To answer this question with any degree of confidence, we need to focus more on the impact of sanism.

B. A “Rich Man’s Defense”?

There is one “wild card” attitude issue that requires special attention here. Another important myth about the use of the insanity defense – one repeated time after time at the Congressional hearings on potential defense abolition that were held following the Hinckley trial – is that it is a “rich man’s defense,”¹¹⁴ a description that I have previously characterized as “a textbook parody of empirical and behavioral reality.”¹¹⁵ The evidence has disproven this myth; the defense is not used disproportionately in cases of wealthy defendants.¹¹⁶

111. See Perlin, *Myths*, *supra* note 8; Perlin, *Psychodynamics*, *supra* note 8.

112. See, e.g., Breheny et al., *supra* note 100, at 96-99; Carmen Cirincione & Charles Jacobs, *Identifying Insanity Acquittals: Is It Any Easier?*, 23 LAW & HUM. BEHAV. 487, 495 (1999).

113. See Peter Westen, *Incredible Dilemmas: Conditioning One Constitutional Right on the Forfeiture of Another*, 66 IOWA L. REV. 741, 742 (1981). I discuss this in a different mental disability law context in Michael L. Perlin, *Hospitalized Patients and the Right to Sexual Interaction: Beyond the Last Frontier?*, 20 N.Y.U. REV. L. & SOC’L CHANGE 517, 540 (1993-94).

114. PERLIN, *JURISPRUDENCE*, *supra* note 8, at 18.

115. *Id.* at 19.

116. See *Hearings on Bills to Amend Title 18 to Limit the Insanity Defense Before the S. Judiciary Comm.*, 97th Cong., 2d Sess. 80 (1982) (testimony of Dr. Henry Steadman); see also NATIONAL COMMISSION ON THE INSANITY DEFENSE, MYTHS & REALITIES: A REPORT OF THE NATIONAL COMMISSION ON THE INSANITY DEFENSE 14, 22-23 (1983) (criticizing as unfounded the proposition that the insanity defense is a “rich-man’s defense”).

But the myth persists, and to some extent, that is not a surprise. Again, think of the vividness heuristic: most high profile cases involving the insanity defense are cases that are the focus of exaggerated media attention,¹¹⁷ thus creating the illusion that these cases are reflective of the entire universe of insanity cases, or even the entire universe of all cases.¹¹⁸

However, there may be some truth to this myth in the case of insanity pleaders who seek to use neuroimaging evidence in support of their plea, in large part because of the extra expenses that would be incurred in such cases.¹¹⁹ In *Ake v. Oklahoma*, the Supreme Court ruled that an indigent criminal defendant who makes a threshold showing that insanity is likely to be a significant factor at trial is constitutionally entitled to a psychiatrist's assistance.¹²⁰ "Generally speaking the courts have read *Ake* narrowly, and have refused to require appointment of an expert unless it is absolutely essential to the defense."¹²¹ More to the point, lower courts have, to this point in time, been generally reluctant to extend *Ake* to requests for funding for neuroimaging tests.¹²²

117. See Perlin, *Neonaticide*, *supra* note 8, at 1-2 ("Some day, someone will probably propose dividing all law cases into two categories: those that make the national news and those that do not."); *id.* (discussing "how the public heuristically uses the vivid case as a representative of all cases").

118. See Craig M. Bradley & Joseph L. Hoffmann, *Public Perception, Justice, and the "Search for Truth" in Criminal Cases*, 69 S. CAL. L. REV. 1267, 1270 (1996) ("[T]he [O.J.]Simpson case is so aberrant that it does not even represent a very useful piece of empirical evidence [as to how the criminal justice system can be improved]."); see Perlin, *Borderline*, *supra* note 8, at 1407 ("In the words of a thirteen-year-old . . . writing about the O.J. trial to the Fresno Bee: Of course, if he did do it, there's always the good old temporary insanity defense, a sure-fire way to bail out of just about any heinous crime, especially murder.").

119. Alison Dundes Renteln, *A Justification of the Cultural Defense as Partial Excuse*, 2 S. CAL. REV. L. & WOMEN'S STUD. 437, 460 (1993) ("Affluent defendants have access to better legal services generally. Utilization of the insanity defense involves no more class bias than other defenses.").

120. 470 U.S. 68, 74 (1985). See generally 4 MICHAEL L. PERLIN, *MENTAL DISABILITY LAW: CIVIL AND CRIMINAL*, § 9A-5.1, at 217-27 (2d ed. 2002).

121. STEPHEN A. SALTZBURG & DANIEL J. CAPRA, *AMERICAN CRIMINAL PROCEDURE* 802 (6th ed. 2000). See also David A. Harris, *Ake Revisited: Expert Psychiatric Witnesses Remain Beyond Reach for the Indigent*, 68 N.C. L. REV. 763, 783 (1990) ("Lower courts often have interpreted *Ake* less than generously, unduly constricting the availability of the right.").

122. Compare, e.g., *Bates v. State*, 750 So. 2d 6, 16-17 (Fla. 1999) (rehearing denied Dec. 10, 1999) (finding no *Ake* violation where defendant sought additional expert assistance in establishing functional organic brain damage), and *Smith v. Kearney*, No. 2 CA-SA 2008-0019, 2008 WL 2721155 (Ariz. App. 2008) (finding no *Ake* error where defendant sought funds for a PET scan), with *People v. Jones*, 620 N.Y.S.2d 656, 657 (N.Y. App. Div. 1994) (reversing conviction because of refusal to fund brain scans). *Jones* is discussed in this context in Kulynych, *supra* note 38, at 1254, and Pettit, *supra* note 60, at 335.

And, since, predictably, the neuroimaging-mental status cases (here, I am combining insanity and incompetency cohorts) that have received the most attention – again, the vividness heuristic – are, besides Hinckley and Gigante, cases such as Mezvinsky and Goldstein.¹²³ This further accentuates this perception of reality. Because of the distortion effect of famous cases, until neuroimaging evidence is used more frequently in what I have called “invisible cases,”¹²⁴ our speculations can only remain tentative.

V. OTHER LEGAL AND BEHAVIORAL/SOCIAL ISSUES

A. Introduction

There are other constellations of legal and behavioral/social issues that need to be unpacked in this inquiry, issues that have, as of yet, received little attention in the academic literature. First, in addition to the *Ake*-related issues already discussed, there are three other legal issues that need further consideration: (1) the defendant’s competency to consent to the imposition of a neuroimaging test or examination; (2) the impact of medications – specifically, antipsychotic medications – on a defendant’s brain at the time that such a test is performed; and (3) the evidentiary rules that govern the admissibility of such testimony as related to limits on a witness’s testimonial expertise. There is currently little in the academic literature about these issues, but it is not especially bold to predict that more attention to such issues should become more common in the future.¹²⁵

In addition, there are other behavioral and social issues to consider: (1) the extent to which the specter of malingering will continue to hold thrall over jurors deliberating in any insanity case; (2) the extent to which neuroimaging evidence will “trump” false OCS in juror deliberations; and (3) the extent to which neuroimaging evidence will (a) have an impact on the moral stigma experienced by some insanity

123. See *supra* note 88.

124. See Michael L. Perlin, *A Law of Healing*, 68 U. CIN. L. REV. 407, 425 (2000) (“[T]he overwhelming number of cases involving mental disability law issues are ‘litigated’” in pitch darkness. Involuntary civil commitment cases are routinely disposed of in minutes behind closed courtroom doors.”) [hereinafter *Law of Healing*].

125. See Michael L. Perlin, “*And I Can See Through Your Brain*”: Access to Experts, Competency to Consent, and the Impact of Antipsychotic Medications in Neuroimaging Cases in the Criminal Trial Process, 2009 STAN. TECH. L. REV. 4 (2009), available at <http://ssrn.com/abstract=1337219>.

pleaders and (b) change our moral intuitions about the insanity defense. These are issues that cry out for more attention.

B. Legal Issues

1. Competency to Consent

In a recent article, Jennifer Kulynych raises the important – but as of yet, rarely discussed – issue of the need to determine whether a defendant is competent to consent to the administration of neuroimaging tests,¹²⁶ noting that there is currently “no federal regulatory bar to enrolling such adults in an MRI study.”¹²⁷ The question of competency to consent to treatment and testing has become the focus of great attention in the past thirty years,¹²⁸ and it is a question that the US Supreme Court has considered several times in the context of the administration of antipsychotic medication in both civil and criminal cases,¹²⁹ concluding that “a qualified right to refuse medication is located in the Fourteenth Amendment’s Due Process Clause.”¹³⁰ Yet, there has been no reported litigation on this specific issue. It is certainly reasonable to suggest that this is something we should be alert for in the coming years.

2. Medication

Five years ago, in an article about brain imaging and the law, Dr. Donald Reeves and his associates stressed that “psychotropic drugs affect functional imaging of the brain,” and that the effects of such drugs “are not always short-lived.”¹³¹ Given the reality that the Supreme Court

126. Jennifer Kulynych, *The Regulation of MR Neuroimaging Research: Disentangling the Gordian Knot*, 33 AM. J. L. & MED. 295, 312-13 (2007).

127. *Id.* at 313.

128. See, e.g., MICHAEL L. PERLIN ET AL., *COMPETENCE IN THE LAW: FROM LEGAL THEORY TO CLINICAL APPLICATION* (2008).

129. See, e.g., *Washington v. Harper*, 494 U.S. 210 (1990) (discussing the right to refuse treatment in prisons); *Riggins v. Nevada*, 504 U.S. 127 (1992) (discussing the right to refuse treatment at insanity defense trial); *Sell v. United States*, 539 U.S. 166 (2003) (discussing the right to refuse treatment in the determination of defendant’s competency to stand trial); *Mills v. Rogers*, 457 U.S. 291 (1982) (noting that the state may recognize greater liberty interests for persons with mental illness than the U.S. Constitution).

130. Michael L. Perlin, “*And My Best Friend, My Doctor/ Won’t Even Say What It Is I’ve Got*”: *The Role and Significance of Counsel in Right to Refuse Treatment Cases*, 42 SAN DIEGO L. REV. 735, 736 (2005).

131. Reeves, *supra* note 19, at 92.

– in establishing its jurisprudence of the right-to-refuse-psychotropic-drug-treatment – has stressed that “the pervasiveness of side effects is a key factor in the determination of the scope of the right,”¹³² it comes as a surprise that this insight has not – as of yet – been discussed elsewhere in the legal literature.¹³³ Again, especially in cases that involve individuals institutionalized against their will in matters that involve the criminal trial process, it is reasonable to predict that this will be the subject of important future consideration.

3. Evidentiary Rules

Both Reeves and Kulynych counsel great caution in decisions as to the admissibility of neuroimaging tests.¹³⁴ Reeves said: “The psychiatric expert who uses brain imaging in the courtroom must face the limitations of the technology and not overstate what the image reveals.”¹³⁵ Adding to Reeves, Kulynych said: “[A] competent psychiatric witness should readily acknowledge the limited evidentiary purposes for which neuroimaging is currently appropriate.”¹³⁶ A *Daubert* analysis is beyond the scope of this paper,¹³⁷ but this certainly must remain “on the table” for all who are interested in this question. The fact that Dr. Alan Felthous and a colleague have stated flatly, “[b]rain imaging for assessment of criminal responsibility . . . would not be appropriate,”¹³⁸ is certainly sobering from this perspective. And, it is obligatory to note the disparity in decision making; that is, in *Daubert* cases the prosecutor’s position is sustained (either in support of questioned expertise or in opposition to it) vastly more often than is that

132. Perlin, *Law of Healing*, *supra* note 124, at 736. See, e.g., *Sell v. United States*, 539 U.S. 166, 179 (2003). The Court states:

The Constitution permits the Government involuntarily to administer antipsychotic drugs to a mentally ill defendant facing serious criminal charges in order to render that defendant competent to stand trial, but only if the treatment is medically appropriate, is substantially unlikely to have side effects that may undermine the fairness of the trial, and, taking account of less intrusive alternatives, is necessary significantly to further important governmental trial-related interests.

Id.

133. Reeves’ article is cited in Snead, *supra* note 1, Redding, *supra* note 5, and Tancredi & Brodie, *supra* note 29, but on other points.

134. See Reeves, *supra* note 19; Kulynych, *supra* note 38.

135. Reeves, *supra* note 19, at 96.

136. Kulynych, *supra* note 38, at 1259.

137. *But see* Snead, *supra* note 1, at 1272 n.25; Kulynych, *supra* note 38, at 1264-70 (discussing the relationship between *Daubert* and this evidence); see generally Pettit, *supra* note 60.

138. Alan Felthous & Henning Sass, *Introduction to this Issue: International Perspectives on Brain Imaging and the Law*, 26 BEHAV. SCI. & L. 1, 1 (2008).

of defense counsel's.¹³⁹ The implications of these findings must be considered as well.

C. Attitudinal and Behavioral Issues

1. The Specter of Malingering

If we are discussing the insanity defense, we cannot avoid the specter of malingering. I wrote this about eight years ago and believe it is still apt today:

[T]he fear that defendants will fake the insanity defense to escape punishment continues to paralyze the legal system in spite of an impressive array of empirical evidence that reveals (1) the minuscule number of such cases, (2) the ease with which trained clinicians are usually able to catch malingering in such cases, (3) the inverse greater likelihood that defendants, even at grave peril to their life, will be more likely to try to convince examiners that they're not crazy, (4) the high risk in pleading the insanity defense (leading to statistically significant greater prison terms meted out to unsuccessful insanity pleaders), and (5) that most successful insanity pleaders remain in maximum security facilities for a far greater length of time than they would have had they been convicted on the underlying criminal indictment.¹⁴⁰

But what is especially intriguing here is some preliminary evidence that of "the existence and involvement of a prefrontal-parietal-subcortical circuit in feigned memory impairment."¹⁴¹ Given the fact that

139. D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?*, 64 ALB. L. REV. 99, 105-08 (2000). In sixty-seven cases of challenged government expertise, the prosecution prevailed in sixty-one of these. *Id.* at 105. Out of fifty-four complaints by criminal defendants that their expertise was improperly excluded, the defendant lost in forty-four of these. *Id.* at 106. Contrarily, in civil cases, ninety percent of *Daubert* appeals were by the defendants, who prevailed two-thirds of the time. *Id.* at 108. For a thoughtful analysis of Professor Risinger's findings, see Deirdre Dwyer, *(Why) Are Civil and Criminal Expert Evidence Different?*, 43 TULSA L. REV. 381, 382-84 (2007). Prof. Susan Rozelle is blunter: "The game of scientific evidence looks fixed." Susan Rozelle, *Daubert, Schaubert: Criminal Defendants and the Short End of the Science Stick*, 43 TULSA L. REV. 597, 598 (2007).

140. Michael L. Perlin, "For the Misdemeanor Outlaw": *The Impact of the ADA on the Institutionalization of Criminal Defendants with Mental Disabilities*, 52 ALA. L. REV. 193, 236 (2000) (alteration in original).

141. Michael Pardo, *Neuroscience Evidence, Legal Culture, and Criminal Procedure*, 33 AM. J. CRIM. L. 301, 308 (2006) (citing research reported on in Tatia M.C. Lee et al., *Lie Detection by Functional Magnetic Resonance Imaging*, 15 HUM. BRAIN MAPPING 157 (2002)). The research done by Lee and her colleagues is also discussed in, *inter alia*, Stacey Tovino, *Functional Neuroimaging Information: A Case for Neuro Exceptionalism?*, 34 FLA. ST. U. L. REV. 415, 428-29

forensic experts are often “trained to be suspicious of malingering,”¹⁴² we need to think about the ways that neuroimaging might turn into the prosecutor’s “trump card” in efforts to cast the insanity-pleading defendant as a malingerer.¹⁴³

2. The Role of OCS

Michael Pardo states flatly that neuroimaging evidence is significant, in part, because it “provides jurors with . . . information . . . beyond their common-sense background understanding.”¹⁴⁴ Joshua Greene and Jonathan Cohen predict that neuroscience evidence will “undermine people’s common sense,” referring specifically to the public’s “libertarian conception of free will and the retributivist thinking that depends on it.”¹⁴⁵

I have identified false ordinary common sense (OCS)¹⁴⁶ as one of the factors that “contaminate[s]” insanity defense practice.¹⁴⁷ It is an open and important question as to whether the contrary-to-OCS aspects of this evidence will have a decontaminating effect on the jury process in insanity cases.¹⁴⁸

(2007). See also Charles N. W. Keckler, *Cross-Examining the Brain: A Legal Analysis of Neural Imaging for Credibility Impeachment*, 57 HASTINGS L.J. 509, 544 (2006) (noting that neuroimaging techniques that reveal deception might inform assessments of malingered pain).

142. Richard Dudley & Pamela Blume Leonard, *Getting It Right: History Investigation as the Foundation for a Reliable Mental Health Assessment*, 36 HOFSTRA L. REV. 963, 978 (2008).

143. See, e.g., Michael L. Perlin, “Everything’s a Little Upside Down, As a Matter of Fact the Wheels Have Stopped”: *The Fraudulence of the Incompetency Evaluation Process*, 4 HOUS. J. HEALTH L. & POL’Y 239, 250 (2004) (“[C]ourts resolutely adhere to the conviction that defendants regularly malingering and feign incompetency . . .”).

144. Pardo, *supra* note 141, at 318.

145. Joshua Greene & Jonathan Cohen, *For the Law, Neuroscience Changes Nothing and Everything*, 359 PHIL. TRANS. R. SOC. LOND. B. 1775, 1776 (2004) (emphasis added). See generally Dean Mobbs et al., *Law, Responsibility, and the Brain*, 5 PUB. LIB. SCI. BIOL. 0693, 0695 (Apr. 2007), available at http://biology.plosjournals.org/archive/1545-7885/5/4/pdf/10.1371_journal.pbio.0050103-L.pdf (noting that neuroscience may play an “important role” in “updating the intuitions concerning free will and responsibility that may implicitly underlie juror deliberations”).

146. See *supra* note 96.

147. See Perlin, *Neonaticide*, *supra* note 8, at 17; PERLIN, JURISPRUDENCE, *supra* note 8, at 305-10.

148. See Jennifer Loudon & Jennifer Skeem, *Constructing Insanity: Jurors’ Prototypes, Attitudes, and Legal Decision-Making*, 25 BEHAV. SCI. & L. 449, 465 (2007) (stating that people are resistant to information meant to correct their misconceptions about the insanity defense).

3. Moral Stigma and Moral Intuitions

A consortium of German research psychiatrists has argued that acceptance of neuroscience testimony may ultimately "reduce the moral stigma society currently attributes to offenders and criminals," as society may learn – from such testimony – that crimes and offenses can be considered "as symptoms of a mental disease."¹⁴⁹ Greene and Cohen suggest further that, "[i]f neuroscience can change [society's moral intuitions], then neuroscience can change the law."¹⁵⁰ All this, however, must be considered in the context of the critique that alleges that mental health professionals have all too often sought inappropriately "to replace the moral determination of criminal responsibility with a scientific determination."¹⁵¹

But if, as Judge David Bazelon maintained, the insanity defense was primarily a "moral" inquiry for the jury,¹⁵² and if it is that area of the law where, as Professor Andrew Taslitz states, "law and morality overtly blend,"¹⁵³ then, again, the potential impact of neuroscience evidence in this area of the law remains significant. However, we cannot do this without keeping in mind Amanda Pustilnik's admonition that "mental illness [is seen] as reflecting a *defect of morality or will*."¹⁵⁴

When we talk about law and morality (especially in the context of the criminal justice process in cases of defendants with mental disabilities who commit, on-the-surface, inexplicable acts), I must turn

149. Witzel et al., *supra* note 22, at 127.

150. Greene & Cohen, *supra* note 145, at 1778. See also Mobbs et al., *supra* note 145, at 0693 (noting that the legal system can be improved by "deepening understandings about why people behave as they do").

151. Susan Murphy, *Assisting the Jury in Understanding Victimization: Expert Psychological Testimony on Battered Woman Syndrome and Rape Trauma Syndrome*, 25 COLUM. J.L. & SOC. PROBS. 277, 287 (1992).

152. DAVID BAZELON, QUESTIONING AUTHORITY: JUSTICE AND CRIMINAL LAW 63 (1987). See also *Virgin Islands v. Fredericks*, 578 F.2d 927, 937 (3d Cir. 1978) (Adams, J., dissenting) ("[T]he law of criminal responsibility [is] a screen upon which the community . . . project[s] its visions of criminal justice.").

153. Andrew E. Taslitz, *Myself Alone: Individualizing Justice Through Psychological Character Evidence*, 52 MD. L. REV. 1, 104 (1993). See also Tosha Foster, Note, *From Fear to Rage: Black Rage as a Natural Progression From and Functional Equivalent of Battered Woman Syndrome*, 38 WM. & MARY L. REV. 1851, 1880 n.189 (1997) (citing RITA J. SIMON & DAVID E. AARONSON, THE INSANITY DEFENSE: A CRITICAL ASSESSMENT OF LAW AND POLICY IN THE POST-HINCKLEY ERA 129 (1988) (finding in a study that juries faced with an insanity defense put experts' clinical/medical testimony into a moral-legal context)).

154. Amanda Pustilnik, *Prisons of the Mind: Social Value and Economic Inefficiency in the Criminal Justice Response to Mental Illness*, 96 J. CRIM. L. & CRIMINOLOGY 217, 263 (2005) (emphasis added). See also Perlin, *Sanist Lives of Jurors*, *supra* note 100, at 257 ("[J]urors reflect and project the conventional morality of the community . . .").

again to the question of sanism to determine whether an understanding of this phenomenon can offer us some answers.

VI. SANISM

First, what do I mean by “sanism”? Sanism is an irrational prejudice of the same quality and character of other irrational prejudices that cause (and are reflected in) prevailing social attitudes of racism, sexism, homophobia, and ethnic bigotry.¹⁵⁵ It permeates all aspects of mental disability law and affects all participants in the mental disability law system: litigants, fact finders, counsel, expert and lay witnesses. “Its corrosive effects have warped mental disability law jurisprudence in involuntary civil commitment law, institutional law, tort law, and all aspects of the criminal process (pretrial, trial, and sentencing).”¹⁵⁶

Here I pose this question: how will juror sanism play out in cases involving neuroscience evidence? I have been thinking and writing about sanism for thirty years,¹⁵⁷ and, for the first time, I am not entirely sure.

One would think that the “hard science” aspects on neuroimaging would alleviate or palliate some of the sanist attitudes that permeate insanity defense jurisprudence.¹⁵⁸ It is vivid, it is clear, and it appears to have survived testing and falsification efforts.¹⁵⁹ As such, it would seem to take away much of the sanist antipathy toward, and distrust of, the insanity defense. This analysis totally sidesteps the empirical question of whether neuroimaging really is as objective and as immune to

155. See generally Michael L. Perlin, *On "Sanism,"* 46 SMU L. REV. 373, 374-75 (1992).

156. Michael L. Perlin, *"You Have Discussed Lepers and Crooks": Sanism in Clinical Teaching,* 9 CLINICAL L. REV. 683, 684 (2003).

157. See Michael L. Perlin, *The Deinstitutionalization Myths: Old Wine in New Bottles,* in CONFERENCE REPORT: THE SECOND NATIONAL CONFERENCE ON THE LEGAL RIGHTS OF THE MENTALLY DISABLED 20 (Karl Menninger & Heather Watts eds., 1979). For subsequent reconsiderations, see, e.g., Perlin, *supra* note 155; PERLIN, JURISPRUDENCE, *supra* note 8; Michael L. Perlin, *"Half-Wracked Prejudice Leaped Forth": Sanism, Pretextuality, and Why and How Mental Disability Law Developed As It Did,* 10 J. CONTEMP. LEG. ISS. 3 (1999).

158. See Paul Skolnick & Jerry Shaw, *A Comparison of Eyewitness and Physical Evidence on Mock-Juror Decisionmaking,* 28 CRIM. JUST. & BEHAV. 614, 623 (2001) (finding that physical evidence had a greater impact on jurors than did eyewitness testimony).

159. See Kulynych, *supra* note 41, at 236. “[U]nlike inkblots, neuroimages are graphic representations of real data about the physical brain, and as such they have enormous underlying scientific complexity.” *Id.* See also, e.g., Jessica Gurley & David Marcus, *The Effects of Neuroimaging and Brain Injury on Insanity Defenses,* 26 BEHAV. SCI. & L. 85, 94 (2008) (“The neuroimages of readily apparent brain damage give the jurors *tangible proof* of the disorder.”) (emphasis added).

falsification efforts as its proponents believe. The point here, as always, is one of perception.

But, as I suggested earlier, I am not sure. Much of the valid and reliable behavioral literature that has been done on the insanity defense tells us that jurors just don't care.¹⁶⁰ That, in spite of a staggering array of unanimous evidence to the contrary, they continue to adhere to empirical myths about the defense's use, its success rate, its (lack of) risk to the pleader, its dispositional phase, and, especially, its inherent falseness.¹⁶¹

And research shows that jurors who hold unfavorable attitudes toward the insanity defense – as a defense – simply do not accept a defendant's mental status as a justification for exculpation.¹⁶² Interestingly, and tantalizingly, other research literature tells us that jurors rely mostly on a "story model," through which they "arrive at verdicts by constructing a story about what happened during an alleged crime based on the evidence and their episode schemata or world knowledge about similar events."¹⁶³ It is not clear at all how neuroimaging evidence "fits" (or does not "fit") within this model.

So, I am not at all sure that the pizzazz of neuroimaging testimony – notwithstanding its colorfulness and its propensity to reductionism – will trump these deep-seated attitudes (the roots of which go back hundreds, maybe thousands, of years, and involve concepts of evil, sin, religion, and the supernatural world).¹⁶⁴ Some twenty years ago, writing

160. See Cirincione & Jacobs, *supra* note 112; Richard W. Jeffrey & Richard A. Pasewark, *Altering Opinions About the Insanity Plea*, 11 J. PSYCHIATRY & L. 29 (1984); Loudon & Skeem, *supra* note 148.

161. See Perlin, *Borderline*, *supra* note 8, at 1416.

[T]he fear of feigned insanity and the distrust of expert witnesses' ability to identify malingering behavior continue to dominate insanity defense jurisprudence. The empirical data suggesting that this problem is minimal continues to be trivialized, and judges, legislators and jurors continue to adhere to this most powerful of all myths.

Id. See generally PERLIN, JURISPRUDENCE, *supra* note 8.

162. Ronald Poulson et al., *Relations Among Mock Jurors' Attitudes, Trial Evidence, and Their Selections of an Insanity Defense Verdict: A Path Analytic Approach*, 82 PSYCHOLOGICAL REP. 3, 11 (1998).

163. Jennifer Skeem & Stephen Golding, *Describing Jurors' Personal Conceptions of Insanity and Their Relationship to Case Judgments*, 7 PSYCHOL. PUB. POL'Y & L. 561, 612 (2001).

164. See, e.g., Perlin, *Neonaticide*, *supra* note 8, at 10 n.54 (discussing JUDITH S. NEAMAN, SUGGESTION OF THE DEVIL: THE ORIGINS OF MADNESS 31, 144 (1975) (addressing the stereotype of persons with mental illness as evil)); Michael L. Perlin, "There Was an Evil Messenger": *Blame, Mental Illness, Wickedness, the Insanity Defense and the Pretexts of the Justice System* (paper presented at the 30th International Congress on Law and Mental Health, Padua, Italy, June 2007) (addressing the same point); Perlin, *Myths*, *supra* note 8, at 626 ("[H]istorically, mental illness was tied to notions of religion and traditionally seen as God's punishment for sin . . ."). See Skeem & Golding, *supra* note 163, at 563 (stating that jurors' attitudes toward the insanity defense were

about the insanity defense in Ohio, John McHenry concluded that that state's defense will probably remain static until the time that "all human behavior, emotions, and thoughts will be discernible from examining a string of DNA on the end of a pin."¹⁶⁵ I am not convinced that he was wrong.¹⁶⁶

Again, I say this tentatively. It is likely that neuroimaging testimony will be admitted in more criminal cases (including, at least in some instances, cases that do not include famous defendants, famous victims, or famous crimes). After there is a more robust database, we will perhaps know more than we do now. But, at the moment I am not prepared to say that neuroimaging testimony will eviscerate all our sanist biases.

There is one more nook and cranny for me to explore here, however. I have frequently expressed my belief that we can make no lasting progress in any related inquiry until we confront the sanist biases of the mental disability law system "and the ways that these biases blunt our ability to intelligently weigh and assess social science data in the creation of a mental disability law jurisprudence."¹⁶⁷ I believe we can only do this using the tool of therapeutic jurisprudence.

VII. THERAPEUTIC JURISPRUDENCE

Therapeutic jurisprudence (TJ) presents a new model by which we can assess the ultimate impact of case law and legislation that affects mentally disabled individuals; namely, by studying the role of the law as a therapeutic agent; recognizing that substantive rules, legal procedures, and lawyers' roles may have either therapeutic or anti-therapeutic consequences; and questioning whether such rules, procedures, and roles can or should be reshaped so as to enhance their therapeutic potential, while not subordinating due process principles.¹⁶⁸ In recent years, TJ

more strongly associated with their verdicts than were manipulations of case facts and available verdict categories) (citing Roberts & Golding, *supra* note 90).

165. John McHenry, *The Judicial Evolution of Ohio's Insanity Defense*, 13 U. DAYTON L. REV. 49, 78 (1987).

166. Another "wild card" here is the seriousness of the charge. Marnie Rice and Grant Harris's research has revealed that "index offense seriousness" was one of the two most important insanity defense verdict determinants, notwithstanding the fact that this is irrelevant to any substantive definition of the defense. Marnie Rice & Grant Harris, *The Predictors of Insanity Acquittal*, 13 INT'L J. L. & PSYCHIATRY 217, 222 (1990). See Loudon & Skeem, *supra* note 148, at 462 (stating that jurors' pre-existing attitudes may actually prevent them from following a trial judge's charge).

167. PERLIN, JURISPRUDENCE, *supra* note 8, at 266.

168. Perlin, *Neonaticide*, *supra* note 8, at 30-31 n.233. See generally THERAPEUTIC JURISPRUDENCE: THE LAW AS A THERAPEUTIC AGENT (David B. Wexler ed., 1990); ESSAYS IN

scholars have turned increasingly more attention to the application of TJ in a criminal law context.¹⁶⁹ There has been, however, almost no therapeutic jurisprudence scholarship as of yet on the question that I am addressing here: what are the TJ implications of greater reliance on neuroimaging testimony in cases in which the defendant raises a non-responsibility defense?¹⁷⁰

In the conclusion of my book-length treatment of the insanity defense, I offered eight recommendations to policymakers as means through which we could seek to ameliorate the "jurisprudential incoherence" of that defense.¹⁷¹ The seventh of the eight recommendations was this:

[W]e must rigorously apply therapeutic jurisprudence principles to each aspect of the insanity defense. We need to take what we learn from therapeutic jurisprudence to strip away sanist behavior, pretextual reasoning and teleological decision making from the insanity defense process. This would enable us to confront the pretextual use of social science data in an open and meaningful way.¹⁷²

In that recommendation, I was focusing on the substance of the defense and the procedures that governed insanity defense trials and the insanity acquittee retention process. In an in-press article, I consider the

THERAPEUTIC JURISPRUDENCE (David B. Wexler & Bruce J. Winick eds., 1991); LAW IN A THERAPEUTIC KEY: RECENT DEVELOPMENTS IN THERAPEUTIC JURISPRUDENCE (David B. Wexler & Bruce J. Winick eds., 1996); THERAPEUTIC JURISPRUDENCE APPLIED: ESSAYS ON MENTAL HEALTH LAW (Bruce J. Winick ed., 1997).

169. See DAVID B. WEXLER, REHABILITATING LAWYERS: PRINCIPLES OF THERAPEUTIC JURISPRUDENCE FOR CRIMINAL LAW PRACTICE (2008); David B. Wexler, *A Tripartite Framework for Incorporating Therapeutic Jurisprudence in Criminal Law, Research, and Practice*, 7 FLA. COASTAL L. REV. 95 (2005); David B. Wexler, *Therapeutic Jurisprudence and the Rehabilitative Role of the Criminal Defense Lawyer*, 17 ST. THOMAS L. REV. 743 (2005); David B. Wexler, *Some Reflections on Therapeutic Jurisprudence and the Practice of Criminal Law*, 38 CRIM. L. BULL. 205 (2002). None of these articles, nor the most important, recent critique of Prof. Wexler's approach to these questions – see Mae C. Quinn, *An RSVP to Professor Wexler's Warm Therapeutic Jurisprudence Invitation to the Criminal Defense Bar: Unable To Join You, Already (Somewhat Similarly) Engaged*, 48 B.C. L. REV. 539 (2007), responded to in David B. Wexler, *Not Such a Party Pooper: An Attempt to Accommodate (Many of) Professor Quinn's Concerns About Therapeutic Jurisprudence Criminal Defense Lawyering*, 48 B.C. L. REV. 597 (2007) – touches on these issues.

On the use of TJ in a correctional context, see Astrid Birgden, *A Compulsory Drug Treatment Program for Offenders in Australia: Therapeutic Jurisprudence Implications*, 30 T. JEFFERSON L. REV. 367 (2008); Astrid Birgden & Michael L. Perlin, "Tolling for the Luckless, the Abandoned and Forsaken": Community Safety, Therapeutic Jurisprudence and International Human Rights Law as Applied to Prisoners and Detainees, 13 LEG. & CRIMINOL. PSYCHOL. 231 (2008).

170. But see *infra* note 176.

171. PERLIN, JURISPRUDENCE, *supra* note 8, at 440.

172. *Id.* at 443.

implications of TJ “to the way that lawyers represent persons in the insanity incompetency process . . . (and the ways they represent them before the decision is made to enter into an insanity plea . . .).”¹⁷³ But, certainly neuroimaging presents additional and important issues beyond the ones I discuss elsewhere.

There has been almost no TJ literature yet published that has even touched on the scientific issues that I discuss in this paper. A.J. Stephani has briefly discussed recent developments in neuroscience as a rationale for the possible expansion of injury-based statutory criterion for child neglect,¹⁷⁴ and Janet Weinstein and Ricardo Weinstein have cited to the neuroscience literature in explaining how “anger builds on anger” in the context of serious family law disputes.¹⁷⁵ Professor Warren Brookbanks (of the University of Auckland Law School in New Zealand) is currently working on papers that begin this study,¹⁷⁶ but as of yet, none have been published. This appears to me to be a fertile area for future researchers to explore.

VIII. CONCLUSION

The question that I pose here is far from an easy one to answer. Perhaps Richard Redding is correct when he says that this evidence will make it easier for jurors to parse insanity claims.¹⁷⁷ Perhaps Neil Feigenson is correct when he says that this evidence “reduces psychosocial complexity” via “naive realism,” making it “inappropriately persuasive.”¹⁷⁸ Perhaps Joshua Greene and Jonathan Cohen are correct in their discussion of the likely impact of neuroimaging on the ways jurors construct free will and retribution, arguing that advances in this discipline “are likely to change the way that people think about human action and criminal responsibility.”¹⁷⁹

173. Perlin, *supra* note 13, manuscript at 17.

174. A.J. Stephani, *Symposium: Therapeutic Jurisprudence and Children*, 71 U. CIN. L. REV. 13, 14 (2002).

175. Janet Weinstein & Ricardo Weinstein, “I Know Better Than That”: *The Role of Emotions and the Brain in Family Law Disputes*, 7 J.L. & FAM. STUD. 351, 383 n.127 (2005).

176. See Warren Brookbanks, *Neuroscience, Folk Psychology, and the Future of Criminal Responsibility* (on file with the author); Warren Brookbanks, *Developments in Neuroscience and the Law: Is Mens Rea Behind Us?* (on file with the author); Warren Brookbanks, *Neuroscience and Therapeutic Jurisprudence: Collision or Synthesis* 362, available at http://ialmh.org/NewYork2009/Book_Version_4.pdf (last visited, Sept. 10, 2008) (abstract of presentation to be given at the International Academy of Law and Mental Health, June-July 2009).

177. Redding, *supra* note 5, at 101.

178. Feigenson, *supra* note 42, at 247, 248.

179. Greene & Cohen, *supra* note 145, at 1784.

Neuroimaging is (or isn't) hard science. It is (or isn't) relatively easy for jurors to interpret. It is (or isn't) immune to falsification efforts. It is (or isn't) objective. It will (or won't) lead jurors to "better" verdicts in insanity cases. It will (or won't) be used disproportionately in news-friendly cases. It will (or won't) "trump" jurors' inherent suspicion of the insanity defense. It does (and here there is no contradictory or antipodal position) raise a variety of important and provocative legal, behavioral, and social issues, none of which has received nearly enough attention by the courts or by commentators.

So what are we to make of this? I believe that the key to an answer here is a consideration of sanism: to what extent will our prejudices, our stereotypes, our slotting, and our typification¹⁸⁰ overwhelm all other evidence and all other issues in this conversation?¹⁸¹ In every aspect of mental disability law that I have ever studied,¹⁸² the answer has been "to a great extent." Is there any reason to think it will be less so here? Perhaps the seductive dazzle of colorful pictures will trump millennia of fear and superstition. But, as of today I wouldn't bet on it (and this analysis again completely and consciously sidesteps the question of whether this evidence is as valuable in litigation as its proponents argue).

I do not want to sound entirely pessimistic. I continue to believe that it is therapeutic jurisprudence – and only therapeutic jurisprudence – that has the potential power to "strip . . . the sanist facade"¹⁸³ from this subject matter, and, in this exposure, allow us to confront the actual substantive issues – legal, biomedical, and ethical – that are before us. As I noted, this inquiry has not yet been undertaken; I hope my paper spurs my colleagues to do so.

I chose Bob Dylan's song "License to Kill" for my title because it was a meditation on "technology run amok."¹⁸⁴ When Dylan was interviewed by *Rolling Stone* the year after the song was recorded, he was asked whether he believed another lyric in the song: "Man has invented his doom/First step was touching the moon" actually reflected reality.¹⁸⁵ He responded, "Yeah, I do . . . on some level, it's just like a

180. See Michael L. Perlin, *Power Imbalances in Therapeutic and Forensic Relationships*, 9 BEHAV. SCI. & L. 111, 125 n.112 (1991); Perlin, *Sanism*, *supra* note 155, at 685.

181. In keeping with the musical reference in the title, I will call this the C major chord of all mental disability law.

182. See, e.g., PERLIN, HIDDEN PREJUDICE, *supra* note 13.

183. Michael L. Perlin, "Things Have Changed:" Looking at Non-Institutional Mental Disability Law Through the Sanism Filter, 46 N.Y.L. SCH. L. REV. 535, 544 (2003).

184. TRAGER, *supra* note 15, at 376.

185. Kurt Loder, *The Rolling Stone Interview: Bob Dylan*, ROLLING STONE, June 21, 1984, available at http://www.rollingstone.com/news/story/5938701/bob_dylan_the_rolling_stone_

door into the unknown.”¹⁸⁶ To a great extent, that could be the tag line for this entire area of exploration and investigation.

interview/ (last visited Apr. 1, 2009) (as quoted in CHRISTOPHER RICKS, DYLAN’S VISIONS OF SIN 48 n.2 (2003)).

186. *Id.*